

Autonomous Defense Node (ADN) – Technical Specification v1

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1. Core Components

- Metrics Collector
- Risk Normalizer
- DQSNet Interface
- Sentinel Interface
- Defense Score Engine
- Action Executor
- State Machine

2. Data Models

NodeStatus { mempool_load, cpu_usage, block_delay, pending_txs, peers }

RiskResult { score, level, details }

DefenseAction { action, reason, timestamp }

3. Defense Scoring Formula

$$\text{score} = \sum(\text{weight}_i * \text{factor}_i)$$

Where weights = { dqsnet:0.35, sentinel:0.35, mempool:0.10, cpu:0.08, delay:0.06, reorg:0.06 }

4. Operational Modes

Passive → Active → High Alert → Emergency

5. Integration Expectations

- RPC connections
- PQC migration capability
- Delegated alert channels